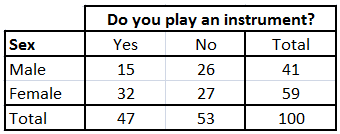
**7.2- Two-way tables NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. A random sample of students a local high school had the following results:



Find the probability that a randomly selected student is:

1. A male.
2. Plays an instrument.
3. A male and plays an instrument
4. A male or plays an instrument.
5. A female or plays an instrument.
6. A female and doesn’t play an instrument.
7. A female GIVEN THAT they play an instrument.
8. Plays an instrument GIVEN THAT they are male.
9. Are GENDER and PLAYING AN INSTRUMENT independent?
10. Are GENDER and PLAYING AN INSTRUMENT disjoint?
11. Look at the following table about grade level and favorite type of pet and answer the probability questions:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Frosh** | **Soph** | **Junior** | **Senior** |  |
| **Dog** | 14 | 18 | 22 | 16 | 70 |
| **Cat** | 8 | 11 | 13 | 15 | 47 |
| **Other** | 12 | 14 | 10 | 9 | 45 |
|  | 34 | 43 | 45 | 40 | ***162*** |

1. What is the probability of being a freshman?
2. What is the probability of having an “OTHER” pet?
3. What is the probability of having a cat and being a junior?
4. What is the probability of being a senior and owning a dog?
5. What is the probability of being a sophomore OR having a cat?
6. What is the probability of being a senior OR having a dog?
7. Given that someone is a sophomore, what is the probability they like Dogs the most?
8. Given that someone likes Cats the most, what is the probability that they are a junior?
9. We pick a freshman at random. What is the probability that they like other the most?
10. Are pet preference and grade level independent?
11. Are pet preference and grade level disjoint?